

THE FRENCH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THIS year's session of this Association was opened last Thursday at Nantes, under the presidency of M. d'Eichthal, who is largely connected with French railways. The income of the Association for 1874 was 37,126 francs, and its capital fund amounts to 174,731 francs. In 1874, 5,350 francs were distributed for purposes of research, and already, owing to the generosity of three of the foundation members, 7,000 francs have been allotted to other purposes without trenching on the regular resources of the Association. This year 13 foundation members and 500 annual members have been added to the Association.

The President in his opening address spoke of the intimate connection between pure science and the various methods employed to satisfy the wants of humanity. It would be almost impossible, he said, to enumerate all the branches of human activity which owe their success to the researches of pure science, —Hygiene, Medicine, Surgery, the Fine Arts, Mechanics, Industry in all its branches, Mining, Metallurgy, Textile Industries, Lighting, Warming, Ventilation, Water Supply, &c. He then referred in detail to several examples of the influence which the results of science have had upon progress in the arts, with the motive forces of water, air and steam, mentioning a multitude of names of men eminent in pure science, from Pascal and Boyle down to Faraday and Sir William Thomson, upon the results of whose researches the great advances which have been made in machinery of all kinds have depended. M. d'Eichthal then spoke of electricity in connection with the names of Oerstedt, Ampère, Faraday, Becquerel and Ruhmkorff; passing on to speak at some length of the steam-engine in its various forms, of the progress which by means of scientific research is being made in its construction and its uses, and of the great services which this powerful application of a scientific discovery renders to man. M. d'Eichthal advocated the establishment of local centres of culture as the best counterpoise to that over-centralisation to which France owes so many of its social misfortunes. "In our time," he said, "science, history, literature, have great wants. Libraries, lecture-halls, laboratories, costly materials, instruments numerous and expensive, are indispensable to pupils for learning and to teachers for carrying on their researches; it is by putting, on a large scale, these resources at their disposal, that we can attract and fix in our midst men eminent in all branches of human knowledge."

M. Ollier, the General Secretary of the Association, gave a detailed *résumé* of the work done at Lille last year.

M. d'Eichthal has been very well received in Nantes, having been greeted with a serenade on Wednesday night.

The most notable foreigner present at the meeting, Admiral Ommaney, was elected, *pro honore*, president of the Geographical Section. The Geographical Congress of Paris has evidently diminished the attendance at the Nantes meeting, although M. Dumas and M. Wurtz have displayed on its behalf a most creditable zeal. Two ladies delivered addresses, on "Female Condition," and the "Sanitary Condition of Schools;" rather a novelty in France, ladies very rarely appearing as lecturers.

The excursions, which are by far the most interesting part of the proceedings, began on Saturday. A balloon ascent is contemplated for to-day. The balloon will be exceptionally large, 4,000 metres, conducted by local aeronauts who have organised an aerial sporting club.

NOTES

AMONGST the objects which have been recently added to the galleries of the Paris Industrial Exhibition of Geography, and are attracting public notice, we may mention a collection of French birds exhibited by M. Bouvier, the collection of apes from the Gaboon, by the Marquis de Compiègne, and a number of antediluvian fossils from the Mentone Caves. The skeletons of two children which had been buried together are in a splendid state of preservation, exhibiting admirably the characteristics of prehistoric cave-life. These two young people were buried in the home of their parents, very probably because it was the only means of defending their bones against the teeth of ferocious hyænas and other large carnivorous animals which were

disputing with man the empire of the future Gaul. The bones were covered with small shells, of which the loin cloth of the departed youngsters had been made. Neither of them had any ornaments in bone, jasper, or pearl, such as is generally discovered under similar circumstances when the skeleton is that of an adult. No child is buried with such objects in Polynesian islands, as none are allowed to wear them even when belonging to the regal families.

In connection with the Exhibition and Congress, it is believed that a series of proposals will be made to the French National Assembly for the promotion of the study of geography. The principal and most effective is to have a relief map of each parish in the parish school, so that pupils may learn to understand the purpose of geographical maps.

THE large reflecting telescope at the Paris Observatory is completed, although it will not be brought into use for two or three months. The equilibrium of the tube is perfect, and it can be directed with the utmost facility on any part of the heavens, although it weighs about six tons.

THE Commission appointed by the Prefect of the Seine for deciding on the improvements to be introduced in the construction of lightning conductors have just published their report. They are of opinion that the conductors should terminate in a point of copper instead of platinum as recommended by the Academy, and propose to institute an annual inspection of lightning conductors, as recommended by M. Wilfrid de Fonvielle in his pamphlet, "Lightning Conductors and the necessity of controlling them." A series of measurements will be presented to the Municipal Council in the next session. The inspection is to take place in autumn, when the stormy season is over.

THE annual provincial meeting of the Iron and Steel Institute will commence, in Manchester, on Tuesday, September 7, under the presidency of Mr. William Menelaus. The Council of Owens College have granted the use of that building for the business meetings. On Tuesday, the Mayors of Manchester and Salford respectively will welcome the members of the Institute, and the remainder of that and Wednesday morning will be devoted to the reading and discussion of papers. On the afternoons of Tuesday and Wednesday, various works in the neighbourhood of Manchester will be open for inspection. On Tuesday evening there will be a *conversazione* in the Town Hall; on Wednesday evening the members will dine together in the Hulme Town Hall; and on Thursday they will visit works within easy reach of Manchester. On Friday, the whole day will be devoted to North Staffordshire.

DURING last week the British Archaeological Association made frequent excursions to places around Evesham, and in the evenings a number of papers were read, mostly of strictly antiquarian interest. The Cambrian Archaeological Association also held its annual meeting last week at Carmarthen, both meetings being brought to a close on Saturday. Next year the latter body meets at Abergavenny under the presidency of Mr. Freeman.

MR. HENRY WILLETT, writing with reference to the Sub-Wealden Exploration, states that the committee have "succeeded beyond their fondest anticipations in solving the original problem, and can now state with certainty that palæozoic rocks do not exist at a depth variously estimated at from 700 ft. to 1,700 ft." From 1,670 ft. to 1,750 ft.—the depth now reached—the strata are shattered and very soft, greatly retarding the work, and seriously imperilling any prospect of attaining a much greater depth. Although at any moment a change of strata may be reached, Mr. Willett is not sanguine that he ever will be able to

report more than that Kimmeridge clay has been discovered in Sussex, and that this clay is very thick.

AN interesting geological discovery has been recently made during excavations for a new tidal basin at the Surrey Commercial Docks. On penetrating some 6ft. below the surface, the workmen everywhere came across a subterranean forest bed, consisting of peat with trunks of trees, for the most part still standing erect. All are of the species still inhabiting Britain; the oak, alder, and willow are apparently most abundant. The trees are not mineralised, but retain their vegetable character, except that they are thoroughly saturated with water. In the peat are found large bones, which have been determined as those of the great fossil ox (*Bos primigenius*). Fresh-water shells are also found. No doubt is entertained that the bed thus exposed is a continuation of the old buried forest, of wide extent, which has on several recent occasions been brought to the daylight on both sides of the Thames, notably at Walthamstow in the year 1869, in excavating for the East London Waterworks; at Plumstead in 1862-3, in making the southern outfall sewer; and a few weeks since at Westminster, on the site of the new Aquarium and Winter Garden. In each instance the forest-bed is found buried beneath the marsh clay, showing that the land has sunk below the tidal level since the forest flourished.

We have received a "Catalogue of the publication of the U.S. Geological Survey of the Territories, F. V. Hayden, Geologist in Charge." The catalogue covers twenty pages, and although the publication extends only from 1867, they already form quite a large library of reports, monographs, catalogues, &c., relating to all branches of the geology, natural history, meteorology, and other points of the extensive region which is being surveyed. The publications of the survey, we believe, Dr. Hayden is willing to send to any societies, libraries, or persons engaged in active scientific investigation who may desire them; those who do should communicate with Dr. Hayden, U.S. Geologist, Washington, D. C. (U.S.) Dr. Hayden is desirous of securing by exchange the publications of foreign countries in geology, paleontology, and natural history generally, to aid in the formation of a library of reference for the use of the Survey, and he hopes that all persons or societies who receive the publications of the Survey will aid him in this matter.

VOL. IV. of the second series of the *Mémoires* of the Royal Society of Science of Liège, contains only three papers, one of them a mere note of two pages on a new species of *Lepidotus*, *L. nichimouti*, by Dr. T. C. Winkler. The other papers are long treatises, one by Dr. E. Candèze, being a "Revision of the Monograph of the Elateridæ" (218 pp.), and the other a treatise "On the Calculus of Probabilities," by the late A. Meyer, published from the MSS. of the author by F. Folie (446 pp.)

MR. J. WOOD-MASON, of the India Museum, Calcutta, has lately directed attention to the presence of a chain of superorbital bones in the wood partridges (*Arboricolæ*), similar to that recorded by Mr. W. K. Parker in the tinamous.

THE fourth number of the *Bulletin de la Société Impériale de Naturalistes de Moscou* contains papers on entomology, botany, geology, &c., by M. V. Motschoulsky, M. A. Petrovsky, M. H. Trautschold, and others, in the French and German Languages.

THE Cincinnati Society of Natural History has lately received a bequest of \$50,000 from Mr. Charles Bodman, of that city. The gift is absolute and without conditions.

A LARGE meteor was observed at Niort (Deux-Sevres), on August 19, at 8.20 P.M. Although the moon was quite full, it was a magnificent spectacle. It made its appearance in the zenith, lasted thirty seconds, and disappeared in the south-east

at an altitude of sixty degrees above the horizon. It must have been seen from other parts of France, but no record has come under our notice.

A CHAIR of Organic Chemistry has been created in the Faculty of Sciences of Paris.

THE additions to the Zoological Gardens during the past week include two Kinkajous (*Cerculeptes caudivolutus*) from British Honduras, presented by Mr. James Wickin; a Central American Agouti (*Dasyprocta punctata*), two Brown Gannets (*Sula fusca*) from Costa Rica, presented by Mr. J. C. Hussey; a Woodford's Owl (*Syrnium woodfordi*) from Natal, presented by Mr. W. E. Oates; a Purple-capped Lory (*Lorius domicella*) from Moluccas, presented by Mr. T. P. Medley; a Mexican Guan (*Penelope purpurascens*) from Central America, presented by Mr. A. Warrington; two Gordon's Terrapins (*Platemys gordonii*) from Trinidad, presented by Mr. Devonish; a Tiger (*Felis tigris*) from India, a White-thighed Colobus (*Colobus bicolor*) from W. Africa, a West Indian Agouti (*Dasyprocta antillensis*) from St. Vincent, deposited; a Blotched Genet (*Genetta tigrina*), and two Crested Pigeons (*Ocyphaps lophotes*) bred in the Gardens.

SCIENTIFIC SERIALS

THE *Naturforscher* for July contains the following among other papers:—On the distribution of land and water in Northern Europe during the ice-period, by K. Pettersen.—On the diffusion of gases through thin layers of liquid, by Franz Exner.—On Helmholtz's theory of vowels, by E. von Quanten.—On the influence of the surface of di-electric bodies upon their action at distances, by Romich and Fajdiga.—On electrodes which cannot be polarised, by A. Oberbeck.—On the changes of colour in an alcoholic solution of cyanine, by El. Borscow. Cyanine is the blue colouring matter of the flowers of *Ajuga reptans* and *A. pyramidalis*.—On the determination of alcohol in wine, by M. Malligand.—On the action of a weak acid upon the salts of a stronger, by H. Hübner and H. Wiesinger.—On the influence of the season upon the skin of embryos, by Herr Dönhof.—On the action of electricity of high tension upon liquids, by G. Planté.—On the motion of the imbibition water in wood and in the vegetable cell, by Julius Wiesner.—On a simple means to find the poles of a rod magnet, by F. Müller.—On the analysis of Japanese bronzes, by E. J. Maumené.—On the nutrition of the animal body by peptone, by A. Gyergyai and P. Plosz.—On the conducting of electricity by flames, by F. Braun.—On the fauna of the Caspian Sea, by O. Grimm.—On the action of lime upon the germinating process of *Phaseolus multiflorus*, by J. Böhm.—The solubility of sodic nitrate and its hydrate, by A. Ditte.—The electric conduction resistance of air, by A. Oberbeck.—Influence of chlorine upon the nutrition of plants, by W. Knop.—On some experiments with disinfectants, by Herr Eismann.—Distinction between chemical and physiological ferments, by A. Müntz.—On the time of the disappearance of the ancient Fauna from the Island of Rodriguez, by A. Milne-Edwards.—Application of the tuning-fork to electric telegraphs, by P. La Cour.—On the climate at the Lower Jenissei, by W. Köppen.—Temperatures and specific gravity of the water of the German Ocean, by H. A. Meyer.—On the diffusion of moist towards dry air, by L. Dufour.—On the condensation of water in the soil, by A. Mayer.—What influences determine the sex of the hemp plants? by Fr. Haberlandt.

Transactions of the Academy of Science of St. Louis (U.S.), vol. iii. No. 2.—This part contains the following papers:—By Dr. C. V. Riley: "Hackberry Butterflies, Description of the early stages of *Apatura lycaon*, Fabr., and *Apatura herse*, Fabr., with remarks on their Synonymy;" "On the Oviposition of the Yucca Moth;" "Description of two new Subterranean Mites;" "Descriptions and Natural History of two Insects which brave the dangers of *Sarracenia variolaris*;" "Description of two new Moths." "Notes on the genus Yucca," by G. Engelmann; "On the Well at the Insane Asylum, St. Louis County," an account of a geological section, by G. C. Broadhead, who also contributes a paper "On the occurrence of bitumen in Missouri;" "Results of Investigations of Indian Mounds," by J. R. Gage; "Catalogue of Earthquakes in 1872-3," by R. Hayes; "On the Forms and Origin of the Lead and Zinc Deposits of S.W.